Isolated torsion of the Fallopian tube
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A 14-year-old Caucasian female patient presented to our Emergency Department with left lower quadrant pain lasting 24 hours. Urinalysis was normal, and she didn't have fever or gastrointestinal symptoms. The patient was declared not sexually active. Irregular menstrual cycles each 2-3 months, LMP 2 months ago.

Imaging Findings:
Abdominal ultrasound showed normal uterus and both ovaries (approximately 11 cc each), and revealed a 27 mm left adnexal tubular cystic structure with normal thickness free from the left ovary, suspicious for hydrosalpinx. No pelvic free fluid.
Colour Doppler US revealed a normal arterial blood flow in both ovaries. Within the hydrosalpinx there were some arterial branches with high RI.

Discussion:
Background:
Isolated fallopian tube torsion is an uncommon entity that is often complicated to diagnose prior to surgical intervention. Its clinical presentation is highly nonspecific, and imaging may be helpful in suggesting this difficult diagnosis. It is a rare cause of lower abdominal pain in women of reproductive age. More commonly, fallopian tube torsion is seen associated with ovarian torsion, and the overall incidence of isolated tubal torsion is 1 in 1.5 million women. [1][2].

Clinical perspective:
When a women of child-bearing age presents with lower abdominal pain, an adequate clinical and analytical examination helps the radiologist to guide the exploration. Although the clinical presentation is unspecific, patients with fallopian tube torsion have usually an acute pain in the infra-umbilical region, commonly unilateral, without fever, syndrome micturition nor alteration of the intestinal habit, and with a normal menstrual pattern and laboratory analyses [2] [3].

Imaging perspective:
There are not specific radiological findings to make the diagnosis of isolated fallopian tube torsion. Nevertheless, the
presence of both dilatation of the fallopian tube, and a normal ipsilateral ovary, should make us think in this pathology. [4] Frequently, the tube has a tense appearance and it is located in an abnormal position (often in the midline). It is more common on the right side than on the left side. In some cases it is possible to see in the Colour Doppler US circular vessels within the hydrosalpinx, showing a whirlpool sign. The acute onset of pain, and detection of these findings, raises suspicion of torsion of the adnexal structures [2].

Outcome:
Treatment can range from detorting the tube to salpingectomy or even salpingo-oopherectomy, depending on the grade of ischaemia and on the number of episodes the patient has previously had. In our case the standard laparoscopic technique was performed. Laparoscopy showed torsion of the left fallopian tube. The uterus, right adnexa, and left ovary were grossly normal. Adhesiolysis and salpingectomy were performed. Histopathological findings revealed an 11 × 5 × 2.3-cm dilated fallopian tube with infarction and extensive haemorrhage.

Teaching Points:
Isolated fallopian tube torsion is an exceptional disease, but we have to take it into consideration in women of reproductive age with acute pelvic pain. Its diagnosis and the distinction from ovarian torsion are challenging and often surgical. However US and Doppler-US are helpful.

Written informed patient consent for publication has been obtained.

Differential Diagnosis List: Isolated torsion of the left fallopian tube, Acute appendicitis (for right-sided disease), Epiploic appendagitis, Tubo-ovarian torsion, Diverticulitis, Colitis

Final Diagnosis: Isolated torsion of the left fallopian tube

References:
Description: Left adnexial tubular cyst suspicious for hydrosalpinx. Normal uterus and left ovary.

Origin: Constanza L, Department of Pediatric Radiology, Hospital Universitario 12 de Octubre, Madrid, Spain
Description: The hydrosalpinx measures 27 mm in diameter. Normal uterus and left ovary. Origin: Constanza L, Department of Pediatric Radiology, Hospital Universitario 12 de Octubre, Madrid, Spain.
Figure 3

Description: Left ovary with normal size and morphology. Origin: Constanza L, Department of Pediatric Radiology, Hospital Universitario 12 de Octubre, Madrid, Spain.
Description: Color Doppler US shows normal arterial blood flow in both ovaries. Origin: Constanza L, Department of Pediatric Radiology, Hospital Universitario 12 de Octubre, Madrid, Spain.
Description: This image shows that within the hydrosalpinx there were some arterial branches with high RI

Origin: Constanza L, Department of Pediatric Radiology, Hospital Universitario 12 de Octubre, Madrid, Spain.
Description: Right ovary with normal size and morphology. Origin: Constanza L, Department of Pediatric Radiology, Hospital Universitario 12 de Octubre, Madrid, Spain.